

LITTONP.002C1

PATENT



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

|            |   |   |                        |
|------------|---|---|------------------------|
| Applicants | : | Craig W. Hodgson, et al.  | Group Art Unit Unknown |
| App. No.   | : | Unknown   |                        |
| Filed      | : | Herewith  |                        |
| For        | : | ARCHITECTURE FOR<br>LARGE OPTICAL FIBER<br>ARRAY USING STANDARD<br>1 X 2 COUPLERS |                        |
| Examiner   | : | Unknown   |                        |

**INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Applicants are enclosing form PTO-1449, which lists references that are also enclosed. This Information Disclosure Statement is being filed within three months of the filing date of this application, and no fee is required in accordance with 37 C.F.R. § 1.97(b)(1).

Respectfully submitted,  
KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: APRIL 2, 2001

By:

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| FORM PTO-1449   | U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE | ATTY. DOCKET NO.<br>LITTONP.002C1     | APPLICATION NO.<br>Unknown |
| INFORMATION DISCLOSURE STATEMENT<br>BY APPLICANT<br><br>(USE SEVERAL SHEETS IF NECESSARY) |  | APPLICANT<br>Craig W. Hodgson, et al. |                            |
|   |  | FILING DATE<br>Herewith               | GROUP<br>Unknown           |

1C971 U.S. PTO  
09/824/19  
04/02/01

## U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE     | NAME               | CLASS | SUBCLASS | FILING DATE (IF APPROPRIATE) |
|------------------|-----------------|----------|--------------------|-------|----------|------------------------------|
| pw               | 4,768,850       | 09/06/88 | Moslehi, et al.    |       |          |                              |
| pw               | 4,928,004       | 05/22/90 | Zimmermann, et al. | 250   | 227,14   |                              |
| pw               | 5,173,743       | 12/22/92 | Kim                | 356   | 345      |                              |
| bw               | 5,866,898       | 02/02/99 | Hodgson, et al.    | 250   | 227,14   |                              |
| bw               | 6,040,571       | 03/21/00 | Hodgson, et al.    | 250   | 227,14   |                              |
| pw               | 6,084,233       | 07/04/00 | Hodgson, et al.    |       |          |                              |

## FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION |    |
|------------------|-----------------|------|---------|-------|----------|-------------|----|
|                  |                 |      |         |       |          | YES         | NO |
|                  |                 |      |         |       |          |             |    |

| EXAMINER INITIAL | OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)  |
|------------------|---|
| pw               | K.P. Jackson, et al., <i>Fiber-Optic Delay-Line Signal Processors</i> , <i>Optical Signal Processing</i> , Chapter 7.1, 1987, pages 431-476.  |
|                  | J.L. Brooks, et al., <i>Time Domain Addressing of Remote Fiber-Optic Interferometric Sensor Arrays</i> , <i>Journal of Lightwave Technology</i> , Vol. LT-5, No. 7, July 1987, pages 1014-1023.                                       |
|                  | A. Dandridge, et al., <i>Multiplexing of Interferometric Sensors Using Phase Carrier Techniques</i> , <i>Journal of Lightwave Technology</i> , Vol. LT-5, No. 7, July 1987, pages 947-952.  |
|                  | J. L. Wagener, et al., <i>Novel Fiber Sensor Arrays Using Erbium-Doped Fiber Amplifiers</i> , <i>Journal of Lightwave Technology</i> , Vol. 15, No. 9, September 1997, pages 1681-1688.   |
|                  | C. Davis, et al., <i>Fiber-Optic Sensors for Geophysical Applications</i> , Optical Technologies, Inc., Invited Paper, <i>SPIE</i> , Vol. 985 Fiber Optic and Laser Sensors VI, 1988, pages 26-32.                                    |
|                  | Behzad Moslehi, et al., <i>Efficient Fiber-Optic Structure with Applications to Sensor Arrays</i> , <i>Journal of Lightwave Technology</i> , Vol. 7, No. 2, February 1989, pages 236-243.   |
|                  | Rajiv Ramaswami, et al., <i>Analysis of Effective Power Budget in Optical Bus and Star Networks Using Erbium-Doped Fiber Amplifiers</i> , <i>Journal of Lightwave Technology</i> , No. 11, November 1993, pages 1863-1871.            |
|                  | A. Dandridge, et al., <i>The Development of Fiber Optic Sensor Systems</i> , Invited Paper, 10th Optical Fibre Sensors Conference, SPIE Proceedings on Optical Fibre Sensors, Vol. 2360, SPIE, Washington 1994, pages 154-161.        |
|                  | Wenxin Zheng, et al., <i>Erbium-Doped Fiber Splicing and Splice Loss Estimation</i> , <i>Journal of Lightwave Technology</i> , Volume 12, March 1994, pages 430-435.  |
|                  | S.G. Grubb, et al., <i>High-Power 1.48<math>\mu</math>m Cascaded Raman Laser in Germanosilicate Fibers</i> , <i>Technical Digest Optical Amplifiers and Their Applications</i> , Paper SaA4, Davos, Switzerland, 1995, pages 197-199. |
| pw               | Joar Saether, et al., <i>Optical Amplifiers in Multiplexed Sensor Systems-Theoretical Prediction of Noise Performance</i> , Eleventh Optical Fiber Sensor Conference, Sapporo, May 21-24, 1996, pages 518-521.                        |

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| EXAMINER   | DATE CONSIDERED |
| *EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT. |                 |

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| EXAMINER INITIAL | OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)  |
|------------------|---|
| <del>JKC</del>   | A.D. Kersey, et al., <i>64-element Time-division Multiplexed Interferometric Sensor Array with EDFA Telemetry</i> , <u>OFC '96 Technical Digest</u> , OSA Technical Digest Series, Vol. 2, Paper ThP5, 1996, pages 270-271.   |
| <del>JKC</del>   | P. Nash, <i>Review of Interferometric Optical Fibre Hydrophone Technology</i> , <u>IEE Proc-Radar, Sonar Navig.</u> , Vol. 143, No. 3, June 1996, pages 204-209.  |
| <del>JKC</del>   | Alan D. Kersey, <i>A Review of Recent Developments in Fiber Optic Sensor Technology</i> , <u>Optical Fiber Technology 2</u> , Article No. 0036, 1996, pages 291-317.  |
| <del>JKC</del>   | C.W. Hodgson, et al., <i>Large-scale Fiber Interferometric Sensor Arrays with Multiple Optical Amplifiers</i> , <u>Technical Digest for OFC '97</u> , Vol. 6, February 16-21, 1997, Dallas Convention Center, Dallas, Texas, Talk WJ5 Presented February 19, 1997, pages 157-158. |
| <del>JKC</del>   | E. Brandon, et al., <i>Cayman-Jamaica Fiber System: The Longest 2.5 Gbit/s Repeaterless Submarine Link Installed</i> , <u>OFC '97</u> , Volume 6, OSA Technical Digest Series, paper TuL1, 1997 page 60.  |
| <del>JKC</del>   | Joar Saether, et al., <i>Noise Performance of Multiplexed Fiber-Optic Sensor Systems with Optical Amplifiers</i> , <u>Optical Review</u> , Vol. 4, No. 1A, 1997, pages 138-144.   |
| <del>JKC</del>   | C.W. Hodgson, et al., <i>Large Scale Interferometric Fiber Sensor Arrays with Multiple Optical Amplifiers</i> , <u>Optics Letters</u> , Vol. 22, No. 21, November 1, 1997, pages 1651-1653.   |
| <del>JKC</del>   | C.W. Hodgson, et al., <i>Optimization of Large-Scale Fiber Sensor Arrays Incorporating Multiple Optical Amplifiers, Part I: Signal-to-Noise Ratio</i> , <u>Journal of Lightwave Technology</u> , Vol. 16, No. 2, February 1998, pages 218-223.                                    |
| <del>JKC</del>   | C.W. Hodgson, et al., <i>Optimization of Large-Scale Fiber Sensor Arrays Incorporating Multiple Optical Amplifiers, Part II: Pump Power</i> , <u>Journal of Lightwave Technology</u> , Vol. 16, No. 2, February 1998, pages 224-231.  |
| <del>JKC</del>   | C.W. Hodgson, et al., <i>Large-Scale Interferometric Fiber Sensor Arrays Incorporating Multiple Optical Switches</i> , <u>Optical Fiber Technology 4</u> , Article No. OF980257, 1998, pages 316-327.   |

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